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P.B. 10.31.03  
Reply Brief

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**Before the Board of Patent Appeals and Interferences**

In re Patent Application of

GREENAWAY et al

Atty. Ref.: 124-786

Serial No. 09/622,405

Group: 2872

Filed: August 17, 2000

Examiner: A. Amari

For: **THREE DIMENSIONAL IMAGING SYSTEM**

\* \* \* \* \*

September 15, 2003

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

BOARD OF PATENT  
APPEALS &  
INTERFERENCES  
OCT 27 2003

Sir:

**REPLY BRIEF**

This Reply Brief is responsive to the Examiner's Answer mailed July 16, 2003 (Paper No. 15) in the above-identified application. This reply is responsive to numerous new points of argument made in the Examiner's Answer, which arguments have not previously been discussed in appellants' Appeal Brief.

Firstly, it is noted that pages 1-7 of the Examiner's Answer are a virtual carbon copy of the Final Rejection, and therefore these points are adequately dealt with in appellants' Appeal Brief. Beginning on page 8, the Examiner provides new points of argument in responding to the appellants' Appeal Brief, and these new points of argument are responded to as follows:

**I. The Examiner Applies Outdated Support for His Legal Conclusions**

On page 9, the Examiner states that "one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references." The Examiner cites a CCPA case in 1981 and a Federal Circuit case in 1986. However, neither of these cases, at least with respect to the contention of the Examiner, are current reflections of the opinions of the Court of Appeals for the Federal Circuit.

For example, the Examiner's cited case *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988) on page 12 is a significantly more recent decision than the cases cited by the Examiner on page 9. Taking the *In re Fine* case as discussed on pages 8 and 9 of appellants' Appeal Brief, this more recent decision and opinion confirms that one can show non-obviousness by pointing out that the references individually fail to teach the structure which is claimed in the claims and, with such failure, the Examiner fails meet his burden of proof in establishing a *prima facie* case of obviousness.

Both with reference to the preamble requirement of "spatially separated images from a plurality of object planes" and the requirement of a "diffraction grating [which] is distorted according to a quadratic function" the prior art does not support any rejection of claim 1.

**A. Claim 1 – The Preamble Requires a "Plurality of Different Object Planes"**

Claim 1 specifies that the claimed apparatus is for producing simultaneously a plurality of spatially separated images from a plurality of object planes. The Examiner

does not deny that neither Kubo nor Shimano teach a structure to provide this claimed result. Kubo teaches only a single object plane used in an auto-focus system and therefore teaches away from producing images from a plurality of object planes. Shimano does not "simultaneously" produce the image from "a plurality of object planes." Only one of Shimano's two lenses are in position at a time therefor teaching away from the claimed invention.

Without references teaching the claimed combination of elements for providing the desired, the references cannot be combined to render obvious the claimed invention.

**B. Claim 1 Requires a Specific Diffraction Grating**

Appellants' Appeal Brief at pages 8 and 9 pointed out that independent claims 1 and 15 both require a specific type of "diffraction grating." The Examiner does not deny that neither of the Kubo and Shimano references teach the claimed diffraction grating. Instead, the Examiner merely cites his outdated case law indicating that one may not show "non-obviousness by attacking references." However, the Court's decision in *In re Fine* clarifying the requirement that the PTO establish a *prima facie* case of obviousness indicates that the PTO can satisfy the burden only by showing some objective teaching in the prior art. In other words, there must be at least some teaching of the claimed elements in the various prior art references in order for it to be obvious for one of ordinary skill in the art to combine those references in the manner of appellants' claims.

The Examiner's fails to even deny that neither of the Kubo and Shimano patents teach appellants' claimed diffraction grating. If no cited reference teaches this claimed

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diffraction grating, there can be no anticipation or obviousness rejection in view of those references.

## **II. Lack of Any Discussion of the Problem Solved by Appellants' Invention**

In the second significant error on the part of the Examiner discussed in appellants' Appeal Brief beginning on page 10, appellants' recited the *In re Rouffet* case of the Federal Circuit which specifies that the Examiner "must" show reasons or motivation for combining references.

The Examiner, while again applying the same outdated legal logic ("one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references") in an attempt to avoid the issue, does not deny that the cited prior art references fail to address the problem solved by the present invention. This problem is the imaging of a three-dimensional object or imaging something from a plurality of object planes.

Kubo is directed towards focusing a laser on a single object plane and maintaining that focus even if the object plane position changes. Shimano is a tracking method for disks in which several embodiments can obtain data from different object planes. However, to do this, lenses are varied so that a single object plane is changed in dependence upon the lens which is substituted. Shimano only teaches reading object material from one optical path at a time. Quite clearly, neither of these references are directed to the problem of imaging a three-dimensional object or something from a plurality of object planes.

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*In re Rouffet* clearly states that, in order to prevent the use of hindsight based on the claimed invention, the Court of Appeals for the Federal Circuit requires the Examiner to show a motivation to combine the reference. In explaining how this motivation is shown, the Court states that the Examiner **must show reasons** "that the skilled artisan, confronted with the same problems as the inventor, would select the elements from the cited prior art references for combination in the manner claimed."

Thus, appellants are not attacking the individual references, because neither of the applied references have anything to do with solving the problem of the present invention. There is no teaching or reason why one would combine those references to solve the problem in the manner of appellants' claims. The Examiner has simply failed to provide any evidence or provide any reference to any material of record in this application which would render such a combination obvious.

Because the Examiner has failed to meet his burden of establishing a *prima facie* case of obviousness, the rejections fall.

### **III. The Examiner Fails to Respond to the "teaches away" argument**

In response to appellants' argument that both the Kubo and Shimano references would lead one of ordinary skill in the art away from appellants' claimed combination of elements, the Examiner comes up with the novel, but completely unsupported legal conclusion, i.e., that there is some burden on the applicant to present arguments as to "why the proposed combination would render the prior art unsatisfactory for its intended purpose or change the principle of operation of the references."

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There is no legal citation as support for this contention, and, in making this argument, the Examiner has ignored his own cited precedent set out by the Court of Appeals for the Federal Circuit in the *In re Fine* case which states that it is "error to find obviousness where references 'diverge from and teach away from the invention at hand'." *In re Fine* at 1599.

As pointed out in appellants' Appeal Brief, both the Kubo and Shimano references would lead one of ordinary skill in the art away from appellants' claimed combination of elements. The Examiner has failed to deny that each of these references would lead one of ordinary skill in the art away from the combination. The Examiner's attempt to establish a new legal theory of obviousness fails, because it is unsupported by any decision of the Board of Patent Appeals and Interferences or the Court of Appeals for the Federal Circuit.

### CONCLUSION

The Examiner's Answer attempts to divert the Board's attention by reference to outdated case law away from the glaring fact that no prior art reference teaches structures which are positively recited in appellants' independent claims, i.e. the "producing simultaneously a plurality of spatially separated images from a plurality of object planes" and the specified "diffraction grating." Further, the Examiner fails to respond to the requirements of the Court of Appeals for the Federal Circuit (set out in its more recent decisions) governing how the Patent Office must meet its burden of establishing a *prima facie* case of obviousness. The examiner ignores the requirement that be some motivation or reason for combining the references in the manner of appellants' claims.

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Finally, the Examiner propounds a new legal theory that, in spite of the failure to deny that the prior art teaches away from the claimed invention, there is now some burden on the part of an applicant to provide arguments as to why the Examiner's proposed combination (whether or not it discloses the elements set out in the claims and whether or not there is any reason for combining the references and whether or not the references have bear any relationship to the problem solved by the claimed invention) that the proposed combination would render the prior art unsatisfactory for its intended purpose. There is simply no legal support for the Examiner's contention.

Thus, and in view of the above, the rejection of claims 1-4, 6-8, 10-12, 15-18, 20 and 21 over the cited prior art is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

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Commissioner for Patents

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Sir:

☐ Correspondence Address Indication Form Attached.☐ **NOTICE OF APPEAL**

Applicant hereby appeals to the Board of Appeals from the decision dated \_\_\_\_\_ of the Examiner twice/finally --  
rejecting claims \_\_\_\_\_ (\$ 320.00 )

\$

☐ An appeal BRIEF is attached in triplicate in the pending appeal of the above-identified application (\$ )

\$

☐ Credit for fees paid in prior appeal without decision on merits

-\$ ( )

☒ A reply brief is attached in triplicate under Rule 193(b)

(no fee)

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s) (\$110.00/1 month; \$410.00/2 months; \$930.00/3 months; \$1450.00/4 months)

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Signature: 



Serial I

Applic:

Title:

Serial No.: 09/622,405

C#/M#: 124-786

Atty: Stanley C. Spooner

Inventor/s: GREENAWAY et al Date: Sep. 15, 03

Title: THREE DIMENSIONAL IMAGING SYSTEM

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Reply Brief in triplicate

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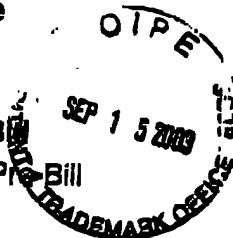
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***FACSIMILE COVER SHEET***

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**PLEASE DELIVER IMMEDIATELY!!!!**Our Ref: 124-786Your Ref: SN 09/622,405Date: October 30, 2003

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Kristen M. McGee  
FACSIMILE OPERATOR

ATTACHMENT: Copy of Reply Brief, Cover Sheet and postcard receipt filed  
September 15, 2003

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